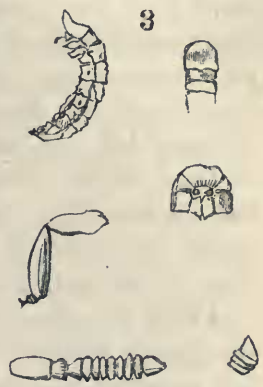


racem; prothorace antice rotundato, postice quadrato; aptera, pedibus compressis.

*Mas ignotus.*

*Female.*—Pale testaceous or dirty fawn-coloured, with a velvety down which looks whitish in different lights. Prothorax a large plate rounded in front, quadrate behind, covering the head, which is small and placed nearly in the middle of the underside, and from it a raised rib runs obliquely to each of the anterior angles of the underside, and another straight backwards to the base, forming the foundation of the sides of the thorax, each side of which meets the other side in a ridge at the sternum, like the ridge of a house inverted. The head is withdrawn into the triangular tunnel thus formed; the eyes are black, sunken; the antennæ short, thick, eleven-jointed; the palpi also very short, with the joints like cups within each other. There are no elytra, but on the middle of the back of the mesothoracic segment there are faint indications of a suture. The stigmata are very distinct on the underside; the legs are lamellate, and the tarsi short and thick.



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I have given the above description from two specimens which I received from the Rev. Mr. Waddell. He mentioned that the insect gave a strong continuous steady light for hours, which has suggested the name. The terminal segments show no signs of having been phosphorescent, being of the same texture as the rest of the surface.

Mr. Waddell informs me that it is rare at Old Calabar.

XLII.—*Synopsis of the African Squirrels (Sciuridæ) in the Collection of the British Museum.* By Dr. J. E. GRAY, F.R.S., V.P.Z.S., Keeper of the Zoological Department.

THE British Museum contains a large collection of the Squirrels of various parts of Africa. The series contains the original type specimens of the species described by Kuhl from the Congo, Waterhouse from Fernando Po, Ogilby from the Gambia, Rüppell from North and Eastern Africa.

There are also three or four specimens purchased from M. du Chaillu; but they can scarcely be regarded as the types of the species described in the 'Boston Journal of Natural History' under his name\*, as only two of them bear any names, viz. :—

\* The American zoologist who misled M. du Chaillu into believing that

1. *Sciurus eborivorus*, which is evidently only a bad bleached specimen of *S. Stangeri*; and, 2. *Sciurus minutus*, which is a distinct species of tree-squirrel. All the specimens in his collection were in a bad condition, very much bleached, and injured by dirt; so that it is very difficult to compare them with the descriptions, which were probably taken from the specimens before they were so damaged by exposure and bad usage. M. du Chaillu did not seem able to identify them with the names, or at least he did not do so when requested; so that it was of no use for the Museum to purchase his specimens. Indeed it is quite clear that M. du Chaillu is not responsible for the distinction of the species.

I may cite, as an instance of his want of zoological knowledge to qualify him for the writing of the paper that appears under his name, that he sent to the British Museum, with the other animals, at the commencement of his last travels, the skull of a Bush-Antelope or Bush-Goat (which I described, as discovered by him, under the name of *Cephalophus longiceps*, in the 'Proceedings of the Zoological Society' as soon as it arrived); yet he does not mention the animal in his narrative, and says, in the *résumé* of the zoology of the district, that antelopes are not found there (!). In the same manner he sent specimens of two kinds of *Manis*, viz. *M. tetradactyla*, with a long tail, and *M. africana* with a short one. The occurrence of only one species is mentioned in the narrative, showing that he did not know that he had collected and sent home two very distinct species. The short-tailed species was not discovered by either Dr. Baikie or M. du Chaillu; for it is evidently the short-tailed *Manis* that Illiger named *Manis gigantea*, from Guinea, more than forty years ago, which had been confused as a synonym with *Manis brachyura* of India, and so overlooked.

Temminck, in his 'Esquisses Zoologiques sur la côte de Guinée' (Leyden, 1853), gives a list of the African Squirrels, and several descriptions, in his usual general style, of the species which he regards as new and therefore gives new names. All the names in the list are marked with an asterisk, which, we are told, in a former page, indicates the adult specimens in the Leyden Museum, then under his direction; but when we turn to the notices of them in the following pages, he states that he only knows several of the species from the descriptions of the authors quoted. He places *Sciurus congicus*, *Sc.*

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he had discovered sundry new mammalia, and who wrote the paper that appeared in the 'Journal of the Boston Natural History Society,' seems to be ashamed of his work, and leaves the traveller whom he misled to bear the discredit of his carelessness or ignorance.

*getulus*, and *Sc. flavivittatus* (which he misnames *S. flavivittis*) with the earless ground-squirrels called *Xerus* by Ehrenberg, though they all have well-developed ears, soft fur, and are as arboreal in their habits as the squirrels of Europe.

Compiling zoologists, who only have the descriptions of other authors to work from, are apt to make such mistakes and refer a species to the wrong group, or to combine very different species as synonyms; but it is surprising that M. Temminck, with the specimens before him, should have done so.

I believe, as well as I can make out the very general descriptions he gives of the species, that some of those which he has described as new are the species which were described with more detail by Dr. Smith and Mr. Ogilby, which he failed to recognize; he has thus encumbered the list with "doubles emplois," which he so constantly accuses his contemporaries of doing.

Some of the African Squirrels are distributed over the whole of Africa. Thus we have *Sc. annulatus* from the north to the south and from the west to the east of that continent; and it is the same with other species.

The young specimens are coloured like the adult.

The African Squirrels, especially those found in the tropical regions, have the fur much brighter and more vivid at some seasons of the year than at others, and the fur of the males is generally brighter than that of the females; but there is little fear of these being mistaken for specific differences, except by such zoologists as are in the habit of describing allied species from single specimens and on very slight characters.

- I. *Cheek-pouches none; body covered with soft fur consisting of elongated more or less rigid hairs and a soft under-fur. Ears ovate, well developed. Arboreal. Tree-Squirrels.*

## 2. SCIURUS.

Gray, Ann. & Mag. Nat. Hist. 1867, xx. p. 271.

\* *Fur one-coloured; tail annulated.*

1. *Sciurus minutus*, Du Chaillu, Boston Journ. 1860, vii. p. 366; Travels, p. 453, t.

Size of a small mouse. Fur soft, olive-grey, yellow-washed; hairs mouse-coloured, with yellow tips: chin, throat, and under-side pale yellow-grey: tail like back, but obscurely black-ringed; hairs yellow, with subterminal black band and yellowish tip. Ears rounded, covered with soft hair forming a tuft and fringe.

*Hab.* West Africa (Du Chaillu). Type in B.M.



\*\* *Back with four black stripes. Fur very soft. Ears covered with soft hairs.*

2. *Sciurus Isabella*, Gray, P. Z. S. 1862, p. 180, t. 24.

Fur olive-grey, very minutely punctulated; chin, underside, and inner side of limbs greyish white: tail black, obscurely pale-ringed, tip black; hairs reddish yellow, with a broad subterminal black band and grey tip.

*Hab.* Camaroon Mountains (Capt. Burton). B.M.

### 3. MACROXUS.

Gray, Ann. & Mag. Nat. Hist. 1867, xx. pp. 271, 275.

A. *The cutting-teeth broad. Tail elongate, longer than the body and head, black-ringed. Underside of body nakedish. Large-sized.*

a. *Lateral streak none; sides of neck like back.* Nos. 1, 2.

b. *Lateral streak white; sides of neck white.* No. 3.

B. *Cutting-teeth compressed, narrow. Underside of the body generally well covered with hair. Middle-sized or small.*

a. *Body without any pale streaks.*

\* *Tail black, pale-ringed.* Nos. 4-8.

\*\* *Tail dark, punctulated.* No. 9.

\*\*\* *Tail red, one-coloured.* No. 10.

b. *Body with a pale streak on each side.* No. 11.

c. *Back with a pale streak on each side.* No. 12.

d. *Shoulders and fore part of sides with a short pale streak.* No. 13.

e. *Back with two pale streaks on each side.* No. 14.

A. *Cutting-teeth large, broad. The underside of the body nakedish, the hairs sparse. Tail elongate, much longer than the body and head, black-ringed; hairs long. Large-sized.*

a. *Body without any white marginal streak on each side; sides of neck like back.*

#### 1. *Macroxus Stangeri*.

*Sciurus Stangeri*, Waterh. P. Z. S. 1842, p. 127; Fraser, Z. T. t. 25.

*Sc. caniceps* (winter), Temm. Esq.

*Sc. eborivorus*, Du Chaillu, Boston J. N. H. vii. p. 363; Travels, p. 284, t. 41.

Olive-grey, varied with the long white tips to some of the hairs; sides of neck, shoulders, and thighs like back; throat and underside of body grey or blackish; the hairs of the back black at the base, with a broad grey and then a broad black ring and a yellowish tip; tail black, with narrow white rings.

*Hab.* Fernando Po (Thompson, B.M.; Mr. Waterhouse, type; Burton, B.M.; Du Chaillu, B.M.). Niger Expedition (Fraser, B.M.)

*Sciurus mutabilis*, Peters, Säugeth. 131, t. 31, 32. f. 2, Mossambique, is probably a variety of *S. Stangeri*, with white tip to the tail.

The species is known from *M. Wilsonii*, which is also nakedish beneath, by the size of the cutting-teeth.

## 2. *Macroxus shirensis*.

Fur whitish grey, closely punctulated with black; hairs of the back dull grey at the base, with a broad black subterminal band and an opaque-white tip; tail elongate, black, white-ringed, and with a black tip; hairs of the tail black, with four white rings and a grey tip.

*Hab.* East Africa, River Shire (Dr. Livingstone).

Smaller and paler than *S. Stangeri*, the fur shorter and closer; the cutting-teeth in one specimen are as wide as those of *M. Stangeri*, and in the other rather narrower.

These squirrels vary in the width of the under cutting-teeth; in general they are nearly as wide in front as the upper ones, but in some specimens they are more compressed and narrower.

*b. Body with a white marginal streak on each side; sides of neck white.*

## 3. *Macroxus caniceps*.

*Sciurus caniceps*, Temm. Esq. 127 (summer), 1853.

*Sc. Nordhoffii*, Du Chaillu, Boston Journal, 1860, vii. p. 363.

Dark olive-grey, black-and-yellow-dotted; crown and temples black, minutely white-dotted; tail darker, with narrow white rings; hairs very long, yellow-and-black-ringed, with a grey tip; feet reddish; sides of neck, throat, and underside of body white, very sparsely hairy, except on the throat and near the dark part of the back.

*Hab.* West coast of Africa (Verreaux): B.M. Ashantee: B.M.

The red spot on the back of the ear is not always visible; it depends on the position of the hair. This species is at once known from *S. Stangeri* by the darker colour, more minute punctulation of the fur, the white sides of the neck, and streak along the sides of the body.

Mr. Nordhoff is the reputed writer of M. du Chaillu's first book of travels.

B. *Cutting-teeth moderate, narrow; underside of the body covered with hair, except in M. Wilsonii. Middle-sized or small Squirrels.*

a. *Body without any lateral streak.*

\* *Tail elongate, more or less distinctly pale-ringed.*

4. *Macroxus Wilsonii.*

?*Sciurus Wilsoni*, Du Chaillu, Boston Journ. N. H. 1860, vii. p. 364.

Fur rather sparse, soft, dark olive, yellow-and-white-punctulated, of the throat and underside of the body very sparse and soft, pale reddish; the outer side of the fore legs and thighs redder; feet red: tail very bushy, black, very obscurely pale-ringed and greyish-washed, greyer at the tips; hairs long, white at the base, with two broad black and one grey ring, and a grey tip.

*Hab.* West Africa, Ovensa River (Du Chaillu): type? B.M. Fernando Po: B.M.

The very bushy tail and naked underside are peculiar. It differs from the male specimen of the next species, which is nakedish beneath, in the colour of the hairs of the tail.

5. *Macroxus rufobrachiatus.*

*Sciurus rufobrachiatus*, Waterh. P. Z. S. 1842, p. 128; Fraser, Zool. Typica, t. 24; Temm. Esq. 136.

*Sc. rufobrachiium*, Gray, List Mamm. B. M. 146 (misprint).

?*Sc. subalbidus*, Du Chaillu.

Fur olive, punctulated with white; chin and underside pale rufous: tail like the back, with close white rings and a blackish tip; hairs black, with three or four yellow rings: the hinder edge of the fore legs and inner side of the thighs bright red.

*Hab.* Fernando Po (Waterhouse). Type in B.M.

Var. *Waterhousii*. Darker; underside red and very spare of fur; tail nearly black, hairs black, with several narrow bright-yellow rings.

The upper front cutting-teeth have two very obscure depressions, scarcely to be called grooves, near the inner side, which are not observed in other *Macroxi*.

See *Sciurus subalbidus*, Du Chaillu, *l. c.* 365, who describes the under surface as thickly covered with hair.

6. *Macroxus punctatus.*

*Sciurus punctatus*, Temm. Esq. Guinée, 138, fide Verreaux.

Blackish grey, variegated with black and white rings; face, chin, and cheeks rufous; throat and chest pale rufous grey; belly bluish grey. Tail elongate, slender, cylindrical, with close black and orange rings and a black tip; hairs orange, with two black rings and a grey tip.



Var. Face and chest blackish grey like belly.

*Hab.* West Africa: B.M. Ashantee: B.M. Guinea (Temm.).  
Niger Expedition (Fraser, B.M.).

Known from the former species by the bright colour of the tail and the absence of the red hinder edge of the fore legs.

#### 7. *Macroxus annulatus*.

*Sciurus annulatus*, F. Cuv., Desm. 1820; Temm. Esq. 1837.

*Sc. gambianus*, Ogilby, P. Z. S. 1835, p. 103; Temm. Esq. 140.

*Sc. multicolor*, Rüpp. Atlas, t. 13.

*Xerus multicolor*, Temm.

*Sc. cepate*, A. Smith, Ill. Z. S. A. t. 5; Peters, Säugeth. 130, t. 32. f. 4 (skull).

Fur pale olive-grey, punctulated with black and yellow; throat and underside yellowish or white; face, sides of the throat, shoulders and thighs, and feet yellower. Small size.

Var. *albina*, West Africa (Rendal, B.M.).

*Hab.* West Africa, Gambia (Rendal, Ogilby, type). Central Africa (Dr. B. Baikie, B.M.). East Africa, Abyssinia (Rüppell, B.M., type). South Africa (Dr. A. Smith, B.M., type; Sundevall, B.M.).

Not distinguished by Temminck.

#### 8. *Macroxus isabellinus*.

Fur thick, close, olive-brown, closely punctulated with grey and black; tail like the back, end very obscurely ringed, tip dark grey, hairs black-and-yellow-ringed; throat and underside of the body greyish white.

*Hab.* West Africa. B.M.

This species is very like the former; but it is larger, the fur much thicker, longer, and darker below, and the tail much more bushy.

The adult and young specimens in the British Museum, obtained from Mr. Warwick, are much alike, and different from any of the varieties of *M. annulatus*.

\*\* *Tail elongated, punctulated, not or only very obscurely annulated.*  
*Small-sized.*

#### 9. *Macroxus poensis*.

*Sciurus poensis*, A. Smith, S. A. Zool. Journ.; Temm. Esq. 141.

Dark olive-grey, minutely punctulated with black and yellow; chin, throat, and beneath rufous grey; hair lead-coloured, with yellowish tips. Tail elongate, coloured like the back, with a fuller black tip; hairs yellow, with two black bands and a black tip.

*Hab.* Fernando Po (Thompson): B.M. Ashantee: B.M.

See *Sciurus musculus*, Temm. Esq. 142; Guinea. Body 5 inches, tail  $6\frac{1}{2}$  inches long. Perhaps same as former. Who does not recognize *S. poensis* from Dr. A. Smith's description?

\*\*\* *Tail one-coloured, red. Middle-sized.*

#### 10. *Macroxus palliatus*.

*Sciurus palliatus*, Peters, Monat. 1852, p. 273; Mossam. 184, t. 31. f. 1 (young), t. 32. f. 3 (skull).

*Sc. ornatus*, Gray, P. Z. S. 1864, p. 13, t. 1.

Head, neck, chest, legs and thighs, and under part of the body red; tail bright red bay; back, shoulders, rump, and upper side of the base of the tail olive-grey, punctulated with white and black.

*Hab.* South Africa, Natal (Fosbrooke; Gray's type in B.M.). Mossambique (Peters).

- b. *Body with a pale stripe on each side, separated from the pale colour of the under part of the body by a band of the same colour as the back.*

#### 11. *Macroxus pyrrhopus*.

*Sciurus pyrrhopus*, F. Cuv. Mamm. Lith. t.; Temm. Esq. 132.

*Sc. rubripes*, Du Chaillu.

*Sc. erythropus*, F. Cuv. Mamm. Lith.; Waterh. Cat. Mus. Zool. Soc. 46.

*Sc. leucostigma*, Cuvier, fide Verreaux (not Temm. Esq. 133).

*Xerus congicus*, Temm. Esq. 125 (not *Sc. congicus*, Kuhl).

Dark brown-grey, dorsal streak yellowish; sides of the head, throat, shoulders, sides of the body, outer side of thighs and legs, and feet red; chin, throat, chest, belly, and inner side of the legs white: tail black, obscurely pale-ringed, whitish-washed, with a black tip; hairs grey at the base, with a very broad black ring and grey tip.

*Hab.* West Africa: B.M. Guinea: B.M. Ashantee: B.M. Fernando Po: type, Waterhouse and A. Smith.

Var. *erythropus*. Fur darker, brighter brown, of the head bright red chestnut.

? *Sc. ebii*, Temm. Esq. 129.

*Hab.* Gaboon (Walker).

- c. *Back with a pale streak on each side; cheeks and temples pale-streaked.*

#### 12. *Macroxus congicus*.

*Sciurus congicus*, Kuhl, Beitr. 66 (young). Type, B.M.

*Sc. flavivittatus*, Peters, Mossamb. Säugeth. 128, t. 29 (adult), t. 32. f. 1.

*Xerus flavivittis*, Temm. Esq. 124; Giebel, 59.

Olive-grey, minutely punctulated with grey and black; back



with a longitudinal white streak along each side; cheeks with two pale streaks; chin, sides of neck, throat, underside of body, and inner side of legs pale grey: tail obscurely annulated; hairs yellowish, with a broad subterminal black band.

*Hab.* Congo (Tuckey; Kuhl, type, B.M.).

Very like *Sc. pyrrhopus*; but the dorsal streaks are higher up the sides, the shoulders and thighs are grey, like the rest of the fur, the tail much more distinctly ringed, and the face has pale streaks. The specimen is not half the size of *Sc. poensis*; and it has no appearance of youth. A half-grown specimen of the latter species in the Museum has the shoulders, thighs, and sides as red as the adult. It is well figured by Peters, but rather paler than the Museum specimen.

See also *Sciurus leucostigma*, Temm. Esq. 133, from Guinea.

See *Sciurus superciliaris*, Wagner, Schreb. Säugeth. iii. 212. Giebel refers it to *Sc. annulatus*!

d. *The shoulders and fore part of the sides with a short pale streak.*

### 13. *Macroxus erythrogenys*.

*Sciurus erythrogenys*, Waterh. P. Z. S. 1842, p. 129; Fraser, Z. T. t. 26.  
*Sc. leucogenys*, Waterh. Ann. & Mag. Nat. Hist. 1842, p. 203.

Fur blackish, minutely punctulated with white or yellow, rather paler on the sides; sides of head reddish; chin, throat, chest, belly, and inner side of the limbs white: tail black, washed with grey, end black; hairs black, yellowish at the base, with a short grey tip. Young and adult are exactly alike.

*Hab.* Fernando Po. B.M., Mr. Waterhouse's type.

e. *The back with two pale streaks on each side; sides brown beneath the outer stripes.*

### 14. *Macroxus getulus*.

*Sciurus getulus*, Linn. S. N. i. 87; Gervais, Mag. Zool. 1842, p. 4.  
? *Xerus getulus*, Temm.

*Barbarian Squirrel*, Edw. Birds, iv. t. 195.

*L'Ecureuil barbaresque*, Buffon, H. N. x. 141 (copied Schreb. t. 221).

*Hab.* Mogador, Morocco (M. Delaporte). Mus. Paris.

This is a species that I have not seen in any English collection. The animal sent by Mr. Drummond-Hay from Morocco as the Ground-Squirrel is *Xerus trivittatus*. It is to be observed that Temminck refers *Sc. getulus* to the genus *Xerus*; so that he probably called *X. trivittatus* *Sc. getulus*; but M. Gervais, who described a soft-furred squirrel from Morocco, which is the one described by Edwards and Buffon as *Sciurus getulus*, also refers it to the genus *Xerus*!

*Sciurus dimidiatus*, Waterh., which he thought might be an American squirrel, has much the habit of the African tree-squirrels. It will be noticed among the American Squirrels in the next Number of the 'Annals.'

II. *Cheek-pouches none. Body covered with flat channelled spines, sometimes intermixed with short cylindrical bristles, without any under-fur. Ears rounded, only slightly raised from the head. Terrestrial. Ground-Squirrels.*

6. XERUS.

Gray, Ann. & Mag. Nat. Hist. 1867, p. 271.

*Xerus*, Ehrenb., Temm. Esq. 121. *Xeros*, Peters.

*Geosciurus*, Lesson, A. Smith.

*Tamias*, sp., Gervais.

Head moderate; nose rounded. Ears short, nearly naked, little raised from the head. Cutting-teeth smooth in front. Fur consisting of flat channelled spines, in some species intermixed with black cylindrical tapering bristles. Front claws long. Tail depressed, with two rows of elongated, rigid, drooping bristles. Male organ very large.

["mostly," in the generic character at p. 271, should be "scarcely."]

a. *Fur consisting only of flat channelled spines; back grizzled, without any longitudinal streak. Xerus.*

b. *Fur consisting of flat channelled spines and black cylindrical tapering bristles; back grizzled, with a longitudinal streak on each side. Geosciurus.*

Temminck and Gervais have referred to this genus some *Macroxi*. The flattened form of the fur is certainly the best character, as that agrees with the terrestrial habit of the animal.

a. *Back grizzled, without any longitudinal streak; fur consisting only of flat channelled spines. Xerus.*

1. *Xerus rutilans*, Gray, L. M. B. M. 144.

*Sciurus rutilans*, Rüpp. Atlas, t. 24.

*X. rutilus*, Temm. Esq.

*Sciurus rutilus*, Schinz.

*Sc. brachyotus*, Ehrenb. S. P.

Fur reddish grey-brown, punctulated with white; orbits, nose, cheeks, and beneath white; tail-hairs reddish brown, with a darker subterminal band and long white tip.

*Hab.* Abyssinia, Massana (Rüppell's type in B.M.).

- b. *Back grizzled, with a white streak along each side from the shoulder to the upper part of the thigh; with flat channelled spines and black cylindrical tapering bristles.* *Geosciurus*.

## 2. *Xerus setosus*.

*Sciurus dschinschicus*, var., Desm.

*Sc. albovittatus*, Fischer.

*Sc. setosus*, Forster.

*Sc. capensis*, Thunb.

*Macroxus albovittatus*, Lesson.

*Sc. namaquensis*, Lecht.

*Sc. erythropus*, Schinz.

*Sc. albovittatus*, Desm.

*Sc. leucoumbrinus*, Rüpp. Atlas.

*Geosciurus capensis*, A. Smith.

*Sc. prætextus*, Wagner.

*Xerus erythropus*, Temm. Esq. 124.

Fur grey-brown, yellow-and-black-punctulated; orbits, nose, chin, underside of the body, and streak on sides of the body white; tail white, with two black bands.

*Hab.* West Africa, Senegal (Rendal): B.M. East Africa, Abyssinia (Rüppell's type of *Sc. leucoumbrinus*, B.M.). North Africa, Egypt. South Africa (Andrew Smith): B.M.

Var. Darker, back punctulated with reddish yellow and black.

*Hab.* West Africa (Whitfield). B.M.

Prof. Sundevall (in K. Vet. A. Hand. 1842, p. 216) considers *Sciurus leucoumbrinus*, Rüppell, of North-east Africa and Arabia distinct from *Sc. setosus* of South Africa; the latter has the "ears smaller, scarcely prominent, the hairs longer, thinner, and with a long very fine tip; the hairs of the tail are black-brown at the base, then white, with a black band and white tip; the teeth are white in front. In size and every other particular they are similar; but he says the skulls are very different, that of *Sc. setosus* being the broadest, with the zygomatic arch more curved, the nose short, blunt, and linear, not conical and sub-acute."

The form of the ear in the stuffed specimens depends greatly on the animal-preserved, and the length of the tips of the hair on the state of the specimen.

The two species may be distinct; but I am inclined to regard the characters given as only individual peculiarities, though my idea may prove incorrect when a large series from each country can be compared; skulls, however, are as apt to vary as other parts of the animal, and are only to be depended on when a series can be examined and compared.



3. *Xerus trivittatus*, Gray, Ann. & Mag. Nat. Hist. 1842, vol. x. p. 264.

*Xerus getulus*, Temm. Esq. 124?

Fur dark grey-brown, white-and-black-punctulated; vertebral line rather paler; throat, chest, streak on sides of back, and part of the sides white; belly nakedish, black: tail black-and-white-varied; hairs white, with three black bands.

*Hab.* North Africa, Morocco (Drummond-Hay). B.M., type.

The specimen in the Museum, which I described in 1842 as *X. trivittatus*, was said by Mr. Leadbeater, from whom it was obtained, to have come from India; but I have no doubt he was misled; and we have lately received living specimens direct from Morocco, some of which are preserved in the Museum. This species differs from *X. setosus* in the spines being thinner, shorter, less rigid, the vertebral line paler, the sides white, and the belly black. The black hairs are not so abundant, and they are not to be observed amongst the white spines that form the streaks.

XLIII.—*On some undescribed points in the Anatomy of the Limpet (Patella vulgata).* By E. RAY LANKESTER, Christ Church, Oxford.

At the late meeting of the British Association I drew attention to certain structures in connexion with the digestive and urinary apparatus of the Limpet which had not been previously recorded, and which have some importance as bearing on the general morphology of the prosobranchiate Gasteropods. Although I have not yet completed my drawings or fully worked out my notes, I am anxious to give here a brief record of their substance.

Since Cuvier's memoir on *Patella*, M. Milne-Edwards has written on the circulatory organs of that mollusk, and MM. Robin and Lebert have briefly noticed the generative organs, and other authors have paid attention to the nervous system. The points which I believe have been overlooked are:—

1st. The existence of an orifice on each side of the "head," in the angle formed by its junction with the muscular foot, and opening into the blood-sinus surrounding the pharyngeal viscera. These orifices I propose to call the capito-pedal orifices.

2nd. The existence of a pair of very large, orange-coloured salivary glands opening by four ducts (two on each side) into the buccal cavity.

3rd. The peculiar laminated "crop," like that of *Chiton*, resembling in structure the psalterium or manyplies of ruminants.